TLM Archive Master Index

A Comprehensive Catalog of Tom McMahon's Archive.org Collection

January 2026 Snapshot

About This Index: This comprehensive catalog documents major items from Tom McMahon's 197-item Archive.org collection as of January 2026. The collection spans five decades of preservation work across computer graphics history, artificial intelligence and LISP machine heritage, architectural and community preservation, environmental documentation, and technical engineering. All materials are freely accessible through the Internet Archive.

197

Total Uploads

40+

Major Items Indexed

5

Primary Categories

50+

Years of History

Table of Contents

1. Computer Graphics & Animation History (1970s-1990s)
2. Artificial Intelligence & LISP Machine Heritage
3. Playa del Rey & Los Angeles Historical Archive
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5. Technical & Engineering Documentation

About the TLM Collection

Access & Usage Information

1. Computer Graphics & Animation History (1970s-1990s)

This collection documents the pioneering era of computer graphics and animation, focusing on Information International Inc. (Triple-I), Foonly Computer Systems, and Symbolics Graphics Division. These materials preserve the technical heritage of companies and individuals who created the first computer-generated imagery for major motion pictures including TRON, Westworld, and Futureworld.

Information International, Inc. (Triple-I) Facebook Page Archive

View on Archive.org →

Identifier: facebook-InformationInternationalIncTripleI
Type: Facebook Page Archive (ZIP)
Content: 532 photos and videos with metadata, comments, and HTML
Date Range: Historical materials from 1970s-1980s, archived 2020

Complete archive of the Information International, Inc. Facebook page including all photographs, videos, metadata, comments, and HTML. Triple-I was a pioneering computer technology company founded by Edward Fredkin in 1962 that created some of the first computer-generated special effects for major motion pictures.

The company employed numerous computer graphics pioneers and created groundbreaking work including the "android vision" effect in Westworld (1973), 3D computer graphics in Futureworld (1976), and significant portions of TRON (1982).

Historical Significance: Documents the birth of commercial computer graphics and animation. Includes rare photographs of early CGI hardware, software development, and the people who created the first movie special effects using computers.

> "*Thanks Tom for collecting these materials and for posting them in the Internet Archive. These are important historical artifacts about the beginning of commercial computer graphics and animation.*"
>
> — Craig Reynolds, Original S-Dynamics Developer, June 2022

Related External Resources:

Ed Fredkin Interviews (YouTube)

Triple-I Wikipedia Article

TLM YouTube Channel - Triple-I Interviews

Foonly F-1 Static RAM and 1K Framebuffer Memory Card

View on Archive.org →

Identifier: foonly-f-1-static-ram-memory-card-half-word-001
Type: Technical Documentation & Engineering Schematics
Designers: Tom McMahon & Dave Poole
Date: September 1978 (PCB tape-up mylars verified)

Technical documentation for the Foonly F-1 Intel 2148a Static RAM Half-Word (18-bit) Memory and 1024-line RGB Framebuffer Card. This was one of the earliest memory-mapped framebuffers in its class, developed specifically for the Foonly F-1 computer used in TRON and other early CGI films. The Foonly F-1 was the fastest PDP-10 ever made, custom-built by Dave Poole, Phil Pettit, and Jack Holloway. Triple-I sponsored its construction for use in their Motion Pictures Product Group. The system required three 200-amp 5V switchers, welding cable, 3/16" copper bus bars, and extensive cooling.

> **Engineering Significance:** Documents critical hardware that enabled the first full-length computer-animated sequences in motion pictures. Every data, address, and OE line featured 220/330 Ohm split terminators. The Intel 2147 4Kx1 static RAMs cost Triple-I $140,000 and were kept in the company safe until installation.

Stanley and Stella in "Breaking the Ice" - Original Symbolics Tapes Restored & Remastered (1080p)

View on Archive.org →

Identifier: stanley-and-stella-in-breaking-the-ice-original-symbolics-tapes-restored-remastered-1080p
Type: Restored Animation Video (1080p)
Original Release: SIGGRAPH 1987 Film and Video Show
Restoration: June 2023 by Tom McMahon, Michael Wahrman, Jim Ryan, Craig Reynolds
Copyright: © 2023 Tom McMahon. All rights reserved.

Complete restoration of the groundbreaking 1987 computer animation "Stanley and Stella in Breaking the Ice," a collaboration between Symbolics Graphics Division and Whitney/Demos Productions. This two-minute film introduced behavioral animation to the world, featuring Craig Reynolds' pioneering flocking algorithms.

The film demonstrates new technology in behavioral and character animation, with character work by Philippe Bergeron (co-director of "Tony de Peltrie"). Created entirely on Symbolics 3600 Series workstations, the rendering was distributed across three Symbolics locations (east and west coast), utilizing machines from every division of the company.

> **Historical Significance:** First demonstration of behavioral animation where group characters' behavior and interrelationships are modeled rather than individually animated. The flocking algorithms developed for this film became foundational to modern crowd simulation and particle systems in visual effects.

Key Personnel:

Craig Reynolds - Behavioral Animation & Flocking Algorithms

Philippe Bergeron - Character Animation

Tom McMahon - Hardware & Production

Michael Wahrman - Producer

Jack Holloway - Symbolics CTO

Russell Noftsker - Symbolics President

Stanley and Stella - Breaking the Ice Poster (19" x 25")

View on Archive.org →

Identifier: 4-files-from-breaking-the-ice-files-1
Type: Poster Archive (TIFF, PDF, JPEG)
Restoration: 2023 by Tom McMahon
Copyright: © 2023 Tom McMahon. All rights reserved.

High-resolution restored poster for the SIGGRAPH '87 film. Available in multiple formats for printing and digital use. The poster features the iconic imagery of Stanley and Stella, the two main characters representing the divided worlds of birds and fish.

Stanley and Stella Press Kit Photos

View on Archive.org →

Identifier: stanley-stella-press-kit-photos-03
Type: Press Kit Archive
Source: Original Symbolics/Whitney-Demos Productions materials

Original press kit photographs and promotional materials for "Breaking the Ice." Includes production stills, character renders, and behind-the-scenes documentation of the distributed rendering process across multiple Symbolics workstations.

Symbolics S-Geometry Manual

View on Archive.org →

Identifier: symbolics-s-geometry-manual
Type: Software Manual
Version: Corresponds to Genera 7.2 and later releases

Complete manual for Symbolics S-Geometry, an integrated system for creating, modifying, and storing 3D objects. S-Geometry is window-based and consists of a 3D database and 3D editor, forming the foundation of the Symbolics animation pipeline.
S-Geometry was used in production of numerous notable films including "Stanley and Stella in: Breaking the Ice" (1987), "The Little Death" (1989), "Jetsons: The Movie" (1990), and 3D animation for "Free Willy" (1993).

> "*Thanks for preserving this!*"
>
> — Craig Reynolds, August 2024

Symbolics S-Dynamics v6 Manual

View on Archive.org →

Identifier: symbolics-s-dynamics-manual
Type: Software Manual
Version: Version 6, System Release 6.0

Manual for Symbolics S-Dynamics, a software system that describes and controls the scheduling and synchronization of events in time. Normally used in conjunction with S-Geometry and S-Render to script animated computer graphics. This system formed the temporal framework for complex animations.

> "*Thanks so much for scanning this! I am the original developer of S-Dynamics. I have a hard copy of this document somewhere but had not looked at it for a very long time.*"
>
> — Craig Reynolds, August 2024

Symbolics Color System Manual

View on Archive.org →

Identifier: symbolics-color-system
Type: Hardware/Software Manual
Version: Corresponds to Genera 7.0 and later releases

Manual for the Symbolics color system: "The Symbolics color system is a Lisp machine with the addition of one or more color boards, some cabling between your machine and your office, and a color monitor." Documents the hardware and software integration that enabled color graphics on Symbolics workstations.

The Symbolics Genera Programming Environment

View on Archive.org →

Identifier: smbx-genera-programming-env-1987
Type: Technical Paper
Authors: Janet H. Walker, David A. Moon, Daniel L. Weinreb, Mike McMahon
Date: 1987

Academic paper describing the Symbolics Genera operating system and programming environment. "This Lisp-based system helps designers get from prototype to product faster." Documents the innovative integrated development environment that powered Symbolics workstations.

The Symbolics Ivory Design and Verification Strategy

View on Archive.org →

Identifier: ivory-design-verification
Type: Technical Paper (VLSI Design)
Authors: Neil Weste, Chris Terman, Howard Shrobe, David Sarrazin, David Tan, Kalman Reti, Eric Nestler, Henry Minsky, Alan Corry, Jim Cherry, Clark Baker
Original Scanner: Jörg Preisendörfer

Paper describing the design and verification strategies used to create a third-generation symbolic processor optimized for the Lisp language. "The approach is unique in that it is probably the first large scale application of object oriented programming techniques to a production IC design problem."

Object-Oriented Programming with Flavors

View on Archive.org →

Identifier: smbx_flavors_1986
Type: Technical Paper
Author: David A. Moon
Date: 1986

Paper describing Symbolics' redesigned object-oriented programming system, Flavors. "Flavors encourages program modularity, eases the development of large, complex programs, and provides high efficiency at run time." Documents a pioneering OOP system that influenced modern object-oriented design.

Symbolics, Inc. Facebook Page Archive

Search TLM Collection →

Type: Facebook Page Archive (ZIP)
Content: 1,295 photos and videos with metadata, comments, and HTML
Status: Complete archive of page since inception

Complete archive of the Symbolics, Inc. Facebook page. Symbolics was founded in 1980 by Russell Noftsker and Jack Holloway, creating the industry-leading LISP machine. The company registered the first .com domain and pioneered numerous advances in computer graphics, artificial intelligence, and software development.

Jack Holloway, Project MAC Researcher and Respected Programmer, Dies at 77

View on Archive.org →

Identifier: jack-holloway-project-mac-researcher-and-respected-programmer-dies-at-77
Type: Obituary / Memorial
Source: MIT CSAIL
Date: July 9 (year of death)

Memorial for John "Jack" Holloway, Project MAC and MIT AI Laboratory researcher, co-founder of Symbolics, and later CTO at Epigram. Holloway was considered one of the most respected hackers in Marvin Minsky's laboratory and made fundamental contributions to ITS (Incompatible Timesharing System), LISP, the Foonly F-1, Chaosnet, and the Scheme-79 chip.
He co-founded Symbolics in 1980 with Russell Noftsker, which became the industry leader in LISP machine performance and registered the first .com domain. Later co-founded Epigram in 1996, serving as CTO and helping develop 10mbps phone line networking, eventually contributing to 54 Mbps 802.11g WiFi standards.

Related Links:

Original MIT CSAIL Article

Dave Poole: Search Ends Off Alaska for Man from Mountain View (1999)

View on Archive.org →

Identifier: dave-poole-search-ends-off-alaska-for-man-from-mtn.-view-nov-1999
Type: News Archive / Memorial
Source: Mercury News (Kaye Ross)
Date: November 1999

Memorial news article about David Poole, retired media processor architect and co-designer of the Foonly F-1. Poole, 56, disappeared during a solo sailing trip to southeast Alaska aboard his 52-foot boat "The Bird" on October 25, 1999. Coast Guard search of Glacier Bay turned up debris but Poole was never found.

Poole was the primary engineer behind the Foonly F-1 computer, spending about a year with Phil Pettit and Jack Holloway designing, constructing, and debugging what became the fastest PDP-10 ever made. Triple-I paid construction costs in what proved to be "an incredible deal" for a machine that actually worked and enabled TRON and other groundbreaking computer graphics.

2. Artificial Intelligence & LISP Machine Heritage

This collection documents the pioneering era of artificial intelligence research and LISP machine development, focusing on the MIT AI Laboratory, Information International Inc. (Triple-I), Symbolics, and Foonly Computer Systems. These materials preserve the technical and institutional foundations of AI research during the 1960s-1990s, including the development of specialized hardware and software systems that enabled groundbreaking work in symbolic processing, knowledge representation, and intelligent systems.

Symbolics, Inc. Facebook Page Archive

Search TLM Collection →

Type: Facebook Page Archive (ZIP)
Content: 1,295 photos and videos with metadata, comments, and HTML
Status: Complete archive of page since inception
Founded: 1980 by Russell Noftsker and Jack Holloway (MIT AI Lab alumni)

Complete archive of the Symbolics, Inc. Facebook page documenting the company that created the premier LISP machine platform for artificial intelligence research and development. Symbolics was founded in 1980 by Russell Noftsker and Jack Holloway, both veterans of MIT's Artificial Intelligence Laboratory and Project MAC.

Symbolics LISP machines became the industry standard for AI research laboratories and provided the computational infrastructure for major advances in expert systems, natural language processing, computer vision, and symbolic mathematics. The company registered the first .com domain (Symbolics.com) and pioneered numerous innovations in object-oriented programming, integrated development environments, and knowledge-based systems.

> **AI Heritage Significance:** Symbolics LISP machines were the primary research platform for AI laboratories worldwide during the 1980s. The machines provided unprecedented interactive development capabilities, powerful symbolic processing, and integrated tools that accelerated AI research. Major AI projects at MIT, Stanford, CMU, and commercial labs relied on Symbolics infrastructure.

The Symbolics Genera Programming Environment

View on Archive.org →

Identifier: smbx-genera-programming-env-1987
Type: Technical Paper
Authors: Janet H. Walker, David A. Moon, Daniel L. Weinreb, Mike McMahon
Date: 1987

Academic paper describing the Symbolics Genera operating system and integrated programming environment that powered LISP machines used in AI research. Genera represented the state-of-the-art in interactive development environments, providing capabilities that wouldn't become common in mainstream computing for decades.
"This Lisp-based system helps designers get from prototype to product faster." Genera integrated compiler, debugger, editor, version control, documentation system, and knowledge representation tools into a seamless environment optimized for rapid iterative development of AI systems.

The Symbolics Ivory Design and Verification Strategy

View on Archive.org →

Identifier: ivory-design-verification
Type: Technical Paper (VLSI Design)
Authors: Neil Weste, Chris Terman, Howard Shrobe, David Sarrazin, David Tan, Kalman Reti, Eric Nestler, Henry Minsky, Alan Corry, Jim Cherry, Clark Baker
Original Scanner: Jörg Preisendörfer

Technical paper describing the design and verification of the Symbolics Ivory processor, a third-generation symbolic processor optimized for LISP and AI applications. "The approach is unique in that it is probably the first large scale application of object oriented programming techniques to a production IC design problem."
The Ivory chip represented the culmination of decades of LISP machine architecture research, incorporating hardware support for garbage collection, type checking, and dynamic binding. The processor enabled portable, high-performance LISP machines that brought AI computing power to a wider research community.

Object-Oriented Programming with Flavors

View on Archive.org →

Identifier: smbx_flavors_1986
Type: Technical Paper
Author: David A. Moon
Date: 1986

Paper describing Symbolics' redesigned object-oriented programming system, Flavors, which became one of the most influential early OOP systems. "Flavors encourages program modularity, eases the development of large, complex programs, and provides high efficiency at run time." Flavors pioneered concepts including multiple inheritance, mixins, method combination, and meta-object protocols that influenced later OOP systems including CLOS (Common Lisp Object System) and eventually languages like Python, Ruby, and C++. The system was specifically designed to support large-scale AI knowledge representation systems.

Foonly F-1 Computer Documentation

View on Archive.org →

Identifier: foonly-f-1-static-ram-memory-card-half-word-001
Type: Technical Documentation & Engineering Schematics
System Designers: Dave Poole, Phil Pettit, Jack Holloway
Sponsor: Information International, Inc. (Triple-I)

Technical documentation for the Foonly F-1, the fastest PDP-10 ever built. The F-1 was custom-designed by Dave Poole, Phil Pettit, and Jack Holloway (all MIT AI Lab alumni) and sponsored by Triple-I for their Motion Pictures Product Group.
The PDP-10 architecture was central to early AI research at MIT, Stanford, and other leading institutions. The Foonly F-1's exceptional performance enabled Triple-I to run both AI applications and compute-intensive graphics rendering on a single system. The machine embodied decades of AI Lab expertise in high-performance symbolic computing.

> **Computing Heritage:** The Foonly F-1 represented the pinnacle of PDP-10 architecture, the platform that hosted much of early AI research including SHRDLU, MACSYMA, and early expert systems. The machine bridged the AI and computer graphics communities, demonstrating that symbolic and numerical computing could coexist on powerful custom hardware.

Jack Holloway, Project MAC Researcher and Respected Programmer, Dies at 77

View on Archive.org →

Identifier: jack-holloway-project-mac-researcher-and-respected-programmer-dies-at-77
Type: Obituary / Memorial
Source: MIT CSAIL
Date: July 9

Memorial for John "Jack" Holloway, Project MAC and MIT AI Laboratory researcher, co-founder of Symbolics, and later CTO at Epigram. Holloway was considered one of the most respected hackers in Marvin Minsky's laboratory and made fundamental contributions to AI computing infrastructure. His work included fundamental contributions to ITS (Incompatible Timesharing System), LISP runtime systems, the Foonly F-1 architecture, Chaosnet networking protocols, and the Scheme-79 chip. At Symbolics (co-founded 1980 with Russell Noftsker), Holloway served as principal architect of the LISP machine hardware and system software that powered AI research worldwide.

AI Pioneer: Jack Holloway's contributions span the entire history of AI computing, from MIT's early timesharing systems through the LISP machine era. His work on the Foonly F-1 and Symbolics architecture enabled generations of AI researchers to develop knowledge-based systems, expert systems, and symbolic reasoning applications that defined the field.

Related Links:

Original MIT CSAIL Article

Information International, Inc. (Triple-I) and AI Heritage

View on Archive.org →

Identifier: facebook-InformationInformationalIncTripleI
Type: Facebook Page Archive (ZIP)
Founder: Edward Fredkin (MIT Professor, AI researcher)
Context: AI and computer technology company

Information International, Inc. was founded in 1962 by Edward Fredkin, an MIT professor and pioneering AI researcher. While Triple-I became famous for computer graphics work, the company's roots were in advanced computing and digital information processing.

Fredkin's background in artificial intelligence and digital physics influenced Triple-I's technical direction. The company attracted top talent from MIT's AI Lab and other leading research institutions, creating a unique environment where AI theory, advanced hardware design, and practical applications converged. The Foonly F-1 sponsorship exemplified Triple-I's commitment to pushing computational boundaries.

> **Institutional Connection:** Triple-I served as a bridge between academic AI research and commercial application. Under Fredkin's leadership, the company demonstrated that advanced computing concepts from AI research could be applied to practical problems in graphics, animation, and digital information processing.

Related Resources:

Edward Fredkin Wikipedia

Triple-I Wikipedia

BSG - A Guide For Sending Email, Part I (Symbolics Email Etiquette)

Search TLM Collection →

Type: Technical Guidelines / Software Documentation
Author: BSG [Bernie S. Greenberg]
Date: April 11, 1984
Context: Symbolics internal communication culture

Proposed Symbolics guidelines for email messages from Bernie Greenberg, documenting the communication culture and technical practices within the AI research and LISP machine development community. Historical artifact from early development of electronic mail culture at an AI computing company.

This document captures the collaborative, technically-sophisticated communication style that characterized the MIT AI Lab diaspora and Symbolics engineering culture. The attention to email etiquette reflects the importance of efficient, precise communication in rapid-iteration AI and systems development.

3. Playa del Rey & Los Angeles Historical Archive

This collection preserves the architectural, cultural, and community history of Playa del Rey and surrounding areas. Materials document Spanish Colonial Revival architecture, early Los Angeles development, and local historical figures and institutions.

Dodd Playa Del Rey Residence - Los Angeles Historic-Cultural Monument No. 1195

View on Archive.org →

Identifier: dodd-playa-del-rey-residence-hcm-application-internet-archive-2019-07-25
Type: Historic Monument Application (Complete)
Address: 8207 Delgany Avenue, Playa del Rey, California
Architect: William J. Dodd
Date Built: 1930
Style: Spanish Colonial Revival
Designation: Los Angeles Historic-Cultural Monument #1195

Complete compilation of all documents and supplemental annexes submitted to the Los Angeles Office of Historic Resources (OHR) and the Cultural Heritage Commission (CHC). Includes documents that did not appear in publicly published reports during various stages of the process, plus Letters of Recommendation and Endorsement that were inadvertently omitted.
The Dodd Playa del Rey Residence is a significant example of Spanish Colonial Revival architecture designed by architect William J. Dodd in 1930. The property represents the architectural heritage of early Playa del Rey development and demonstrates Dodd's skill in adapting historical Spanish and Mediterranean styles to Southern California's climate and landscape.

> **Architectural Significance:** One of the finest examples of Spanish Colonial Revival residential architecture in Playa del Rey. The home features characteristic elements including white stucco walls, red clay tile roofing, arched openings, decorative tilework, and careful integration with the landscape. Designated as HCM #1195, recognizing its cultural and historical importance to Los Angeles.

Related Documentation:

NCWP Documentation (PDF)

Playa del Rey Archives Facebook Page

Search TLM Collection →

Type: Facebook Page Archive (ZIP)
Content: 9,471 photos and videos in 431 folders
Scope: Comprehensive historical documentation of Playa del Rey

Complete archive of the Playa del Rey Archives Facebook page, containing extensive photographic and video documentation of Playa del Rey's history. Includes materials related to Joseph Mesmer, Louis Mesmer, Andres Briswalter, Marina del Rey, Rancho la Ballona, and early community development.

The archive preserves historical photographs, documents, maps, and community memories spanning from the original Rancho la Ballona land grant through modern development. Materials document the Mesmer family's role in developing Playa del Rey and the transformation of the area over more than a century.

Playa del Rey Motordrome Facebook Page

Search TLM Collection →

Type: Facebook Page Archive (ZIP)
Content: 242 photos and videos
Topic: Historic board track racing venue

Archive documenting the Playa del Rey Motordrome, a historic board track racing venue. Features rare photographs and materials related to Dick Wallen, Barney Oldfield, and early land speed racing. The motordrome represented an important era in American motorsports history.

Rancho La Ballona History

Search TLM Collection →

Type: Historical Documentation
Authors: Various (including S. Ravi Tam, Jonathan Weiss)
Time Period: Spanish/Mexican land grant era through American period

Historical documentation of Rancho La Ballona, the Mexican land grant awarded to the Machado family by Governor Alvarado in 1839. Includes excerpts from "Distant Vistas - Exploring the Historic Neighborhoods of Mar Vista" and other historical sources.
Covers the transition from Spanish/Mexican control through American acquisition, the Machado family's stewardship, Louis Mesmer's inheritance, and eventual subdivision and development. Key figures include Felipe Talamantes, Ignacio Machado, John J. Charnock, John D. Young, and the Mesmer family.

The Marty Stone Mystery

View on Archive.org →

Identifier: the-marty-stone-internet-archive
Type: Local Historical Mystery
Location: 6605 W. 83rd Street, Mar Vista (off Emerson)

"I found the Marty Steppingstone while digging in a garden at the rear of the lot at 6605 W. 83rd St at my old house off the northwest corner of 83rd and Emerson. I've kept the stone ever since; it is here in my garage in PDR. I have no idea who Marty was, only that the handprint appears to be that of a young child (5 yrs. or so?). That would make Marty something like 73 now [written in 2007]. I've tried for years to find Marty or his family to no avail."
A touching local historical mystery documenting a child's handprint preserved in concrete, representing the human stories embedded in neighborhood history.

William J. Dodd Uplifters Club Portrait

Search TLM Collection →

Type: Historical Photograph
Subject: William J. Dodd, architect of the Dodd Playa del Rey Residence

Portrait photograph of architect William J. Dodd, designer of significant Spanish Colonial Revival structures in Southern California. Dodd was a member of the Uplifters Club, a Los Angeles social organization founded in 1913.

4. Ballona Wetlands Environmental Documentation

This collection documents critical technical and regulatory issues in the Ballona Wetlands Restoration Project, including a 21% engineering discrepancy in flood control specifications and extensive CEQA (California Environmental Quality Act) compliance documentation.

Ballona Wetlands REIR Document Index

View Complete REIR Index →

Identifier: ballona-reir-document-index
Type: Document Index (HTML & PDF)
Created: January 2026
Scope: Comprehensive index of Revised Environmental Impact Report documents

Comprehensive index documenting Revised Environmental Impact Report (REIR) materials for the Ballona Wetlands Restoration Project. Exposes critical 21% engineering discrepancy where the California Department of Fish and Wildlife (CDFW) uses 68,000 cubic feet per second (cfs) for flood control design instead of the correct 82,000 cfs terminal / 72,000 cfs upstream specifications from the authoritative 1979 U.S. Army Corps of Engineers report.
The index includes technical analysis, regulatory correspondence, CEQA scoping comments, and documentation of institutional dysfunction spanning more than two decades. Materials cover improper CEQA segmentation, unresolved tidal water sources, blocked federal permitting, and sea level rise implications.

> **Critical Issue:** The 21% flood capacity error (68,000 cfs vs. 82,000 cfs) represents a major engineering discrepancy with significant flood safety implications for the project and surrounding communities. The error has persisted despite documentation from authoritative sources including the 1979 USACE report and California Coastal Commission correspondence.

Key Reference Documents:

1979 USACE Report: Design Memorandum No. 4, Ballona Creek (82,000 cfs terminal / 72,000 cfs upstream)

California Coastal Commission Correspondence (F9b-7-2024-corresp.pdf)

December 18, 2025 RWQCB Meeting (YouTube)

CDFW REIR FAQs "What was here before BWER?"

View on Archive.org →

Identifier: cdfw-reir-scoping-comments-earthquakes-tom-mc-mahon-2023-11-20-02_202311
Type: REIR Scoping Comments
Date: November 20, 2023
Format: PDF

REIR scoping comments addressing CDFW's Frequently Asked Question "What was here before BWER?" Includes comprehensive analysis of earthquake hazards, historical conditions, seismic considerations, and technical documentation gaps in the Ballona Wetlands Restoration Project environmental review.
Document highlights the need for proper geological and seismic analysis given the project's location in an active seismic zone and questions about historical wetlands conditions versus current restoration plans.

Friends of Ballona Wetlands DEIR Comments (June 2022)

Search TLM Collection →

Type: Public Comment on Draft Environmental Impact Report
Author: Scott H. Culbertson, Executive Director, Friends of Ballona Wetlands
Date: June 9, 2022

Commentary from Friends of Ballona Wetlands on the restoration project: "Friends of Ballona Wetlands does not support full-tidal. As described in our overview comments, CDFW and the US Army Corps must demonstrate the need for full-tidal with additional data, otherwise the current habitat should remain, as it best reflects the historic conditions of a bar-built estuary."
"In general, the Friends find that the wetlands habitat of West Area B is substantially better than much of the remainder of the wetlands..." Represents alternative perspectives on appropriate restoration approaches.

5. Technical & Engineering Documentation

This collection includes technical documentation of engineering projects, infrastructure, and systems. Materials range from high-voltage power transmission to software development practices.

Engineering Pornography: "This Is One Of My Favorite Geek Stories Of All Time"

View on Archive.org →

Identifier: engineering-pornography-this-is-one-of-my-favorite-geek-stories-of-all-time
Type: Technical Documentation / Engineering Story
Author: Thomas L. McMahon (original email 1989)
Posted by: Jamie Zawinski (jwz.org)
Date: Original email September 27, 1989; blog post November 24, 2002
Topic: High voltage power line construction

Detailed engineering account of high-voltage underground power transmission line construction near Playa del Rey, connecting Scattergood Generating Station in El Segundo to the Los Angeles power grid. Originally shared as an email to Hardware@riverside.scrc.symbolics.com, later popularized by Jamie Zawinski as "one of my favorite geek stories of all time."
Documents the impressive engineering involved in installing massive underground power cables, including welding techniques, cable specifications, conduit construction, and the physical challenges of working with conductors carrying hundreds of megawatts. The story exemplifies the hidden infrastructure that makes modern life possible.

> **Engineering Context:** The largest underground transmission line in the City of Los Angeles (as of construction date). The project involved coordination between Los Angeles Department of Water and Power (LADWP), Scattergood Generating Station, and multiple specialized contractors. Demonstrates the scale and complexity of urban power infrastructure.

Related Links:

Original Jamie Zawinski Blog Post

LADWP Press Release

BSG - A Guide For Sending Email, Part I (Symbolics Email Etiquette)

Search TLM Collection →

Type: Technical Guidelines / Software Documentation
Author: BSG [Bernie S. Greenberg]
Date: April 11, 1984
Topic: Email etiquette and best practices

Proposed Symbolics guidelines for email messages from Bernie Greenberg, documenting early thinking about electronic mail etiquette and best practices. Historical artifact from the early development of email culture and network communication standards at Symbolics.

Taining Ganluyan Temple Near Sanming

View on Archive.org →

Identifier: taining-ganluyan-temple-near-sanming-2015-05-08
Type: Photographic Documentation
Location: Dajinhu scenic area, Fujian Province, China
Date Photographed: May 8, 2015

Photographic documentation of the 876-year-old Taining Ganluyan Temple, located on the west bank of Taining Jinhu Lake in the Dajinhu scenic area, Fujian Province, China. The temple represents ancient Chinese architecture and religious heritage.

About the TLM Collection

Mission & Purpose

The TLM Archive preserves materials of historical, technical, and cultural significance that might otherwise be lost or become inaccessible. This collection serves researchers, historians, engineers, preservationists, and the general public by providing free access to primary source materials.

Collection Development

Tom McMahon (TLM) has systematically preserved 197 items spanning five decades, from the 1970s

through the present. This index catalogs the major documents across five primary categories and provides organized access to the most historically significant materials. The collection reflects personal involvement in pioneering computer graphics and AI computing development, architectural preservation, environmental advocacy, and commitment to documenting technical heritage.

Indexing Methodology

This January 2026 snapshot indexes approximately 40 major items from the 197-item collection, focusing on materials of greatest historical significance, technical importance, and public interest. Items selected for detailed indexing include:

- Core computer graphics and animation heritage (Stanley and Stella, S-Geometry, rendering systems)
- Artificial intelligence and LISP machine documentation (Symbolics, Foonly, MIT AI Lab connections)
- Complete technical documentation sets (manuals, schematics, papers)
- Major historical preservation projects (Dodd Residence HCM application)
- Large-scale Facebook page archives (community history, corporate heritage)
- Critical environmental documentation (Ballona Wetlands REIR)
- Notable technical stories and engineering documentation

The remaining items in the collection include supporting materials, supplementary documentation, and additional resources accessible through Archive.org's search interface. All 197 items remain publicly available at https://archive.org/details/@tmcmahon

Notable Aspects

Computer Graphics Heritage: First-hand materials from the pioneering era of CGI (1970s-1990s), including restoration of groundbreaking animation works like "Stanley and Stella in Breaking the Ice" featuring Craig Reynolds' behavioral animation algorithms, comprehensive Symbolics graphics software documentation (S-Geometry, S-Dynamics, S-Render), and materials documenting the creation of effects for TRON, Westworld, and Futureworld. These materials preserve the creative and technical foundations of modern computer animation.

Artificial Intelligence & LISP Machine Heritage: Documentation of the MIT AI Laboratory diaspora through Symbolics, Foonly, and Information International Inc. (Triple-I). Materials include Symbolics LISP machine architecture papers (Ivory processor, Genera operating system), object-oriented programming innovation (Flavors system), memorial documentation for Jack Holloway and other AI pioneers, and technical materials on the computing platforms that enabled expert systems, symbolic reasoning, and knowledge representation research during the foundational decades of AI.

Architectural & Community Preservation: Comprehensive documentation supporting the Historic-Cultural Monument designation of the Dodd Playa del Rey Residence (HCM #1195), extensive preservation of Playa del Rey community history through archived Facebook pages containing thousands of photographs, and documentation of Rancho la Ballona land grant history spanning Spanish, Mexican, and American periods.

Environmental Documentation: Detailed technical analysis and regulatory documentation of the Ballona Wetlands Restoration Project, including engineering specifications, CEQA compliance materials, and public comment submissions. Materials support informed public participation in environmental decision-making and document institutional processes over multiple decades.

Technical Engineering: Documentation ranging from framebuffer circuit design and memory-mapped graphics systems to high-voltage power infrastructure construction. Materials preserve the detailed technical knowledge behind complex engineering projects and pioneering computer systems.

Access Philosophy

All materials in this collection are made freely available through the Internet Archive. The collection embraces the principle that historical, technical, architectural, and environmental knowledge should be accessible to all. By preserving and sharing these materials, the collection serves computer graphics historians, AI researchers, computer scientists, architects, preservationists, environmental advocates, engineers, and the general public.

Access & Usage Information

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TLM Archive Master Index

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This index provides a permanent, crawlable gateway to the TLM Archive Collection on Archive.org. All materials are preserved for long-term accessibility and are made freely available to support research, education, and public understanding of computer graphics history, architectural preservation, environmental issues, and technical heritage. The index facilitates discovery through search engines and provides organized access to materials that might otherwise remain difficult to find.

Materials preserved here serve the public interest by documenting technological innovation, preserving local history, supporting environmental transparency, and maintaining technical knowledge for future generations. The TLM Collection demonstrates the critical role of individual archivists in preserving materials that institutional archives may overlook.